

### Remarks

Applicants and their undersigned attorney have carefully reviewed the first Office Action of July 26, 2006 in the above-identified patent application, together with the prior art references cited and relied on by the Examiner in the rejections of the claims.

Applicant appreciates the Examiner's careful consideration of the present invention, but it is Applicants' belief and understanding that the present invention is not anticipated by, and is not obvious in light of, the prior art. Reexamination and reconsideration of the application, and allowance of the claims is respectfully requested.

The subject application discloses and claims a method of removing alcohols *and* water following the process of synthesizing methylcyclopentadienyl manganese tricarbonyl (MMT). Methylcyclopentadiene (MCP) is a key raw material in the synthesis of MMT. Excess MCP is recovered during the product distillation step. Water and alcohols end up distilling over with the MCP stream and act as contaminants during the next process cycle. It has been discovered that the counter-intuitive step of adding water to the excess MCP component helps to extract both alcohol and water.

In the present Office Action of July 26, 2006, Claims 1, 2, 8 and 9 were rejected under 35 U.S.C. 102 (b) as anticipated by Spainhour (U.S. Pat. No. 3,331,819). The Examiner contends that Spainhour discloses "a method of extracting water and alcohol from a mixture with a cyclopentadiene such as methylcyclopentadiene." The '819 patent is, according to the Abstract of the Invention, directed to the preparation of SO<sub>2</sub> and olefin copolymers by "copolymerizing SO<sub>2</sub> and an olefin of the group consisting of polycyclic olefins and alkenylcycloalkanes in the presence of a free radical initiator."

The '819 patent intends to provide novel resins of SO<sub>2</sub> and cyclic compounds containing non-conjugated multiple unsaturation or to provide a process for producing the same. (See Column 1, lines 30-36). The polymerization is effected by contacting the polyene compound and SO<sub>2</sub> in the presence of one of the defined initiators. The polyene compound is normally maintained in the liquid phase or in solution in a liquid diluent. As described, the polymerization reaction can be conducted without a diluent or a reaction diluent can be employed that does not interfere with the reaction. Reaction diluents are listed at the beginning of Column 4, line 15 and include: hydrocarbons such as pentane, heptane, cyclohexane, benzene, toluene, and the like; ethers such as diethyl ether, p-dioxane and the like; alcohols such as methanol, ethanol and the like; sulfoxides such as dimethyl sulfoxide; sulfones such as tetrahydrothiophene-1,1-dioxide (sulfolane); and tertiary amides such as N-methylpyrrolidone. Following the polymerization, the copolymers that include the - SO<sub>2</sub> - component "can be recovered by such methods as evaporation of the diluent, filtration, centrifugation, or by discharging a solution of the polymer in a water-miscible solvent into water or alcohol." (See Column 4, lines 30-34). The quoted passage discusses the recovery of the copolymers of SO<sub>2</sub> and an olefin and not the extraction of water and alcohol from a crude stream.

The '819 patent does not teach adding water to a material comprising MCP, water and alcohol to create organic and aqueous fractions and separating the organic and aqueous fractions wherein the separated organic fraction comprises less water and alcohol than in the material before the addition of water and subsequent separation of fractions. The passages cited by the Examiner do not teach the method of the present

invention. Specifically, the passage at column 4, lines 27-34 does not discuss adding water to MCP, water and alcohol in order to cause aqueous fractions and then separating the organic and aqueous fractions so that less water and alcohol are in the resulting material. The passage at column 4, lines 57-60, as cited by the Examiner, teaches pouring co-polymers of the polymerization process into a bottle of water. The polymer is then filtered out, washed with water and methanol, and then dried. There is no teaching in this passage of adding water to excess MCP that is in water and alcohol in order to extract the water and alcohol.

Besides, the present application acknowledges that contaminants can be removed via a water wash. Washing the polymer as in Spainhour, is not equivalent to, and does not suggest, adding water to the MMT crude, as taught by the present invention. In fact, the present application discusses that a water wash of the polymer is how the water that is to be extracted is initially introduced into the MMT crude (see the last three sentences of paragraph 0003).

As the reference does not teach each and every element of the present invention, the rejection under section 102 is improper. Claims 1, 2, 8 and 9 are allowable over Spainhour. Reconsideration and withdrawal of the rejection is respectfully requested.

The Examiner also rejected claims 3-5 under 35 U.S.C. 103(a) as obvious in light of Spainhour taken alone. Applicant believes these claims depend from allowable subject matter and, therefore, should also be allowable. Even if anticipation of the underlying independent claim were established, Applicant believes the cited reference

cannot properly be argued to have rendered the present invention obvious under §103. The reference is non-analogous to the subject invention, and the Office Action relies upon impermissible hindsight analysis. Applicant further contends that the Office Action has not established why it would have been obvious at the time the invention was made to a person of ordinary skill in the art to have modified the primary reference to arrive at the claimed subject matter. The Office Action has not established the level of ordinary skill in the art, or why the allegedly obvious modification had not occurred prior to the Applicant's invention.

In order to rely upon a reference for a 35 U.S.C. 103 obviousness-type rejection, the cited reference must be analogous. Here, however, the cited art is not within the field of the Applicants' endeavor and is not reasonably pertinent to the particular problem the inventor was solving (see, e.g., In re Deminski, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986)). Spainhour teaches a process for preparing copolymers of SO<sub>2</sub> and an olefin by co-polymerizing SO<sub>2</sub> and an olefin. Spainhour, to our knowledge, is classified by the Patent Office in the art of "Synthetic Resins or Natural Rubbers: from a sulfur containing reactant." (Class 528, subclass 373). The subject application is provisionally classified with "Liquid Purification or Separation" (Class 210). Therefore, the Patent Office has at least indicated that the disclosed inventions are non-analogous in terms of structure and/or function. Applicant also believes that it is self-evident that Spainhour does not serve the same function as the present invention. Moreover, the Examiner has not established why a reference disclosing a process for preparing co-

polymers would have "commended itself" to the Applicant's attention while considering the problem of extracting water and alcohol from MCP in MMT crude.

While the cited reference must be analogous in order to properly form a part of a 103 rejection, it is also respectfully submitted that the proper application of the obviousness test of 35 U.S.C. 103 requires one to picture the person of ordinary skill in the art as having the (analogous) references before him/her without any knowledge of the applicant's invention. Hindsight reconstruction is prohibited, as it was well stated by the Court of Customs and Patent Appeals in the case of In re Rothermel and Waddell, 125 USPQ 323 at 331 (1960), wherein the court noted:

The examiner and the Board in rejecting the appealed claims did so by what appears to us to be a piecemeal reconstruction of the prior art patents in light of appellant's disclosure...It is easy now to attribute to this prior art the knowledge that was first made available by appellants and then to assume that it would have been obvious to one having the ordinary skill of the art to make these suggested reconstructions. While such a reconstruction of the art may be an alluring way to rationalize a rejection of claims, it is not the type of rejection which the statute authorizes. 35 U.S.C. 103 is very specific in requiring that rejection on the grounds the invention would have been obvious must be based on a comparison between the prior art and the subject matter as a whole at the time the invention was made.

This requirement for a detached viewing of the teachings and suggestions of the references necessitates that Examiners study the references and determine what their teachings would be to a person who has not read Applicants' application or read their claims. If the reference is considered in the foregoing manner, it is most respectfully submitted that it does not provide a proper anticipation of the rejected claims under 103.

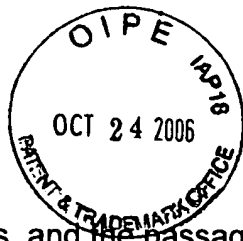
The Office Action also does not meet the burden established in the case law set forth in the Office Action. For instance, the Examiner has not resolved the level of

ordinary skill in the pertinent art. The Office Action acknowledges the factual inquiries that must be made pursuant to *Graham v. John Deere Co.* without actually making the inquiries set forth.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spainhour in view of Krouse et al. (U.S. 6,544,319). The Office Action also does not provide a reason for combining or modifying the references cited by the Examiner in the manner suggested by the Examiner **except** to arrive at Applicants' specifically defined construction, taught only by Applicants' disclosure. Applicant would also note that the time period between the references issuing relative to each other and to the filing date of the subject application suggests it is anything but obvious to combine the disclosures.

The cited reference does not teach or suggest the present invention in any combination. Quite simply, the cited references do not expressly or impliedly suggest the claimed combination, and the Office Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. The only reason offered for combining the references is to arrive at the Applicants' claimed invention. This hindsight reconstruction of the references is impermissible. The references are not analogous to the subject invention, and the Office Action does not satisfy the necessary factual inquiries of *Graham v. John Deere*.

For one or more of the foregoing reasons, it is believed that pending claims are patentable over the prior art cited and relied upon in the Office Action. The rejection is respectfully traversed. As such, reconsideration and re-examination of the application,

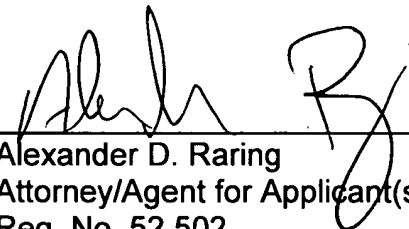


allowance of the claims, and the passage of the application to issue is respectfully requested.

The Commissioner is hereby authorized to charge any deficiencies in payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 50-2127.

Respectfully Submitted,

Date: 10/23/2006

  
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by:

  
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